IN THE CLAIMS:

1. (Currently amended) A method of transmitting data from a transmitter to a receiver, including the steps of:

providing successive sequences of a plurality of modulation symbols for the data,

providing successive sequences of a plurality of spreading codes for the data ,

each individual one of the sequences of the spreading codes for the data being juxtaposed to an individual one of the sequences of the modulations for the data,

providing a parallel presentation of each individual one of the sequences of modulation symbols for the data and the juxtaposed one of the sequences of spreading codes for the data, and

simultaneously selecting an ~~successive~~ individual one of the plurality of the modulations for the data in each sequence and an ~~successive~~ individual one of the plurality of the spreading codes in the juxtaposed sequence for the data, and

2. (Currently amended) A method as set forth in claim 1, including the step of

combining the ~~successive~~ selected one of the modulations for the data in each sequence on a reiterative basis and the ~~successive~~ selected one of the plurality of spreading codes for the data in the juxtaposed sequence on a reiterative basis.

3. (Currently amended) A method as set forth in claim 2, including the step of:

transmitting to the receiver the combination on the reiterative basis of the ~~successive~~ selected one of the modulations for the data in each successive data modulation sequence ~~on the reiterative basis~~ and the selected one of the spreading codes for the data in the juxtaposed spreading code sequence ~~on the reiterative basis~~.

4. (Original) A method as set forth in claim 3 wherein

the modulations are selected from a group consisting of QAM, SQAM and QPSK and wherein

the spreading codes in each sequence are at different rates.

5. (Currently amended) A method as set forth in claim 2 wherein

the combination of each of the ~~successive~~ selected one of the data modulations in each sequence and each of the ~~successive~~ selected one of the spreading codes in the juxtaposed sequence constitutes the product of the selected one of the data modulations in the sequence and the selected one of the spreading codes in the sequence.

6. (Currently amended) A method of transmitting data from a transmitter to a receiver, including the steps of:

providing input signals,

mapping the input signals with a number of binary bits,

modulating the input signals from the mapper with reiterative sequences of M modulations where M indicates a number of different data modulations,

providing reiterative spreading code sequences each having N spreading codes where N indicates a number of different spreading codes,

the number of binary bits in the mapper providing for a number of different values at least equal to the product of M and N, and

simultaneously selecting on a reiterative basis an individual ~~each successive~~ one of the M modulations in each data modulation sequence ~~on a reiterative basis~~ and an individual [[~~each~~]] ~~successive~~ one of the N spreading codes in each spreading code sequence ~~on a reiterative basis~~.

7. (Currently amended) A method as set forth in claim 6, including the step of:

selecting each ~~successive~~ individual one of the M data modulations in each data

modulation sequence simultaneously with each ~~successive~~ individual one of the N spreading codes in each spreading code sequence, and

combining on a reiterative basis the individual one of the M data modulations in each modulation sequence ~~on the reiterative basis~~ and the individual one of the N spreading codes in each spreading code sequence ~~on the reiterative basis~~.

8. (Currently amended) A method as set forth in claim 6, including the steps of:

multiplying the simultaneous selection on the reiterative basis of each ~~successive~~ selected one of the M data modulations in each data modulation sequence ~~on the reiterative basis~~ and each ~~successive~~ selected one of the N spreading codes in each spreading code sequence ~~on the reiterative basis~~, and

transmitting the multiplied modulation and the spreading ~~factors~~ codes in each sequence to the receiver.

9. (Currently amended) A method as set forth in claim 6, including the steps of:

providing on a reiterative basis of the ~~successive~~ selected one[[~~s~~]] of the M data modulations in each successive one of the M data modulation sequences and the ~~sequences successive~~ selected one[[~~s~~]] of the N spreading codes in each successive one of the N spreading code sequences,

presenting in parallel on the reiterative basis the selected [[~~M~~]] data modulation[[~~s~~]] in each successive one of the M data modulation sequence[[s]] and the selected one of the N spreading codes in each successive one of the spreading code sequences, and

combining the ~~selecting~~ selected one of the M data modulations and the selected one of the N spreading codes in each parallel presentation.

10. (Currently amended) A method as set forth in claim [[~~9~~]][[8]], including the steps of:

multiplying, in each parallel presentation, on the reiterative basis, of the selected one of the M data modulations in each successive one of the M data modulation sequences and the selected one of the N spreading ~~factors~~ codes in each successive one of the N spreading code sequences, and

transmitting to the receiver in each parallel presentation on the reiterative basis, the multiplied combination of the selected one of the M data modulations in each successive one of the M data modulation sequences and the selected one of the N spreading codes in each ~~parallel presentation~~ successive one of the N spreading code sequences.

11. (Currently amended) A method as set forth in claim 10 wherein

the M data modulation[[~~s~~]] in each successive one of the M data modulation sequences is [[~~are~~]] selected from a group consisting of QAM, SQAM and QPSK data modulations and wherein

the N spreading codes in each successive one of the N spreading code sequence[[s]] are at different [[~~rates~~]] frequencies.

12. (Currently amended) A method of transmitting data from a transmitter to a receiver, including the steps of:

providing a channel encoding of the information data,

providing a mapping of the channel encoded data,

providing a plurality of modulations of the mapped data in each of a plurality of M data modulation sequences,

providing a plurality of spreading codes in each of a plurality of N spreading code sequences,

selecting an individual one of the data modulations in each M data modulation sequence and an individual one of the spreading codes in each N spreading code sequence,

combining the selected one of the [[M]] data modulations in each M data modulation sequence and the selected one of the [[N]] spreading codes in each N spreading code sequence, and

transmitting to the receiver the combination of the selected one of the data modulations in each M data modulation sequence and the selected one of the [[N]] spreading codes in each N spreading code sequence ~~to the receiver~~.

13. (Currently amended) A method as set forth in claim 12 wherein

the [[M]] data modulations are produced in [[~~a~~]] first sequences and the spreading codes are produced in [[~~a~~]] second sequence[[s]] and wherein

the sequences of the data modulations and the sequences of the spreading codes are alternately provided and wherein

the M data modulations in each of the first ~~individual~~ sequence[[s]] ~~of the data modulations~~ and the spreading codes in each of the alternately provided sequences of the spreading codes are paired in parallel and wherein

an individual one of the data modulations in the first sequences and an individual one of the spreading codes in the alternately provided sequences in each parallel pair of sequences are selected for combination.

14. (Currently amended) A method of transmitting data and receiving the data, including the steps

of:

providing data modulations in sequences each having M data modulations where M indicates the number of data modulations in each sequence,

providing spreading codes in sequences each having N spreading codes where N indicates the number of spreading codes in each sequence, the sequences of the N spreading codes being provided alternately with the sequences of the M data modulations,

selecting an individual one of the M data modulations ~~values~~ in each sequence of the data modulations,

selecting an individual one of the N spreading codes in each spreading code sequence, and

combining the selected one of the M data modulations in each M data modulation sequence and the selected one of the N spreading codes in each N spreading code sequence.

15. (Currently amended) A method as set forth in claim 14 wherein

the combination of the selected one of the M data modulations in each sequence of the [[M]] data modulations and the selected one of the N spreading codes in the next alternate one of the spreading code sequences is transmitted from the transmitter to the receiver.

16. (Currently amended) A method as set forth in claim 14, including the steps of:

providing at the receiver successive combinations of the selected one of the M data modulations in each [[M]] data modulation sequence and the selected one of the N spreading codes in each alternate sequence of the [[N]] spreading codes, and

identifying ~~of~~ the combinations received at the receiver of the selected one[[s]] of the M data modulations in each [[M]]data modulation sequence and the selected one[[s]] of the N spreading codes in each N spreading code ~~alternate~~ sequence ~~of the spreading codes~~.

17. (Original) A method as set forth in claim 16, including the step of:

demodulating the data modulations in each received combination after the identification of the received combination.

18. (Original) A method as set forth in claim 16, the step of:

despreading the spreading code in each received combination after the identification of the received combination.

19. (Currently amended) A method as set forth in claim 16 wherein

each combination of the selected data modulation in each M data modulation sequence and the selected spreading code in each N spreading code sequence is subjected to correlation factors to identify the combination and wherein

the spreading code in each received combination is despread after the identification of the received combination and wherein

each received combination of the modulated data in each M data modulation sequence and the spreading code in each N spreading code sequence is demodulated after being despread.

20. (Currently amended) A method as set forth in claim 18 wherein

each combination of the selected data modulation in the data modulation sequence and the selected spreading code in the spreading code sequence is passed through a plurality of matching filters, each having individual characteristics, to identify the characteristics of the combination in accordance with the characteristics of the filter through which the combination passes and wherein

the spreading code in each received combination is despread after the identification of the combination and wherein

each ~~received combination of the selected~~ data modulation in each combination ~~and the selected spreading code~~ is demodulated after [[~~being~~]] the combination is despread.

21. (Currently amended) In a method of receiving and processing data from a transmitter, the steps of:

receiving at a receiver signals transmitted from the transmitter and constituting a combination of a selected one of M data modulations in a data modulation sequence and a selected one of N spreading codes in a spreading code sequence where M indicates the number of the data modulations in the data modulation sequence and N indicates the number of the spreading codes in the spreading code sequence,

identifying, from the different combinations of the M data modulations in the data modulation sequence and the N spreading codes in the spreading code sequence, the combination of the selected one of the M data modulations in the data modulation sequence and the selected one of the N spreading codes in the spreading code sequence, and

despreading and demodulating the combination of the selected one of the M data modulations in the data modulation sequence and the selected one of the N spreading codes in the spreading code sequence.

22. (Currently amended) In a method as set forth in claim 21 wherein

correlation techniques are used to identify, from the combinations of the M data modulations in the data modulation sequence ~~and the different ones of~~ the N spreading codes in the spreading code sequence, the combination of the selected one of the M data modulations in the data modulation sequence and the selected one of the N spreading codes in the spreading code sequence.

23. (Previously amended) In a method as set forth in claim 21 wherein

matched filter techniques are used to identify, from the combinations of the M data modulations in the data modulation sequence and the N spreading codes in the spreading code sequence, the combination of the selected one of the M data modulations in the data modulation sequence and the selected one of the N spreading code in the spreading code sequence.

24. (Previously amended) In a method as set forth in claim 22 wherein

the received data is multiplied by each individual one of the N spreading codes in the correlation techniques and wherein

the individual ones of the products are integrated with time and wherein

the individual ones of the integrated products are squared and wherein

the combination of the selected one of the M data modulations in each data modulation ~~data~~ sequence and the selected one of the [[~~M~~]] [[N]]spreading code[[s]] in each spreading code sequence is identified by the highest value in the squaring of the integrated products.

25. (Currently amended) A method of transmitting data from a transmitter to a receiver, including the steps of:

encoding data in accordance with instructions from the receiver,

puncturing the data in accordance with instructions from the receiver,

interleaving the punctured data,

modulating the interleaved punctured data with a selected one of M data modulations in each of a plurality of data modulation sequence in accordance with instructions from the receiver,

spreading the modulated interleaved punctured data by a selected one of N spreading codes in each of a plurality of spreading code sequence[[s]] in accordance with instructions from the receiver,

combining the selected one of the M data modulations in the data modulation sequence and the selected one of the N spreading codes in the spreading [[~~case~~]] code sequence, and

transmitting to the receiver the modulated interleaved punctured data spread by the ~~particular~~ selected spreading code in each of the plurality of spreading code sequences ~~of the combination of the selected one of the M modulated data and the selected one of the N spreading codes~~.

26. (Currently amended) A method as set forth in claim 25 wherein

the spreading codes are in sequences each having N spreading codes and wherein

an individual one of the M data modulations is selected in each data modulation sequence and wherein

the spreading code sequences alternate with the data modulation sequences and wherein

an individual one of the N spreading codes is selected in each spreading code sequence and wherein

the selected one of the M data modulations in each ~~modulated~~ data modulation sequence and the selected one of the N spreading codes in each spreading code sequence are combined and wherein

the combination of the selected one of the M data modulations in each data modulation sequence and the selected one of the N spreading codes in each alternate spreading code sequence is transmitted to the receiver.

27. (Currently amended) A method as set forth in claim 26 wherein

the selected one of the M data modulations in each data modulation sequence and the selected one of the N spreading codes in each spreading code sequence are ~~disposed~~ provided in parallel to obtain the combination and wherein

the combination of the selected one of the M data modulations in each data modulation sequence and the selected one of the N spreading codes in each alternate spreading code sequence is provided by multiplying the selected one of the M data modulations and the selected one of the N spreading codes.

28. (Currently amended) A method as set forth in claim 2[[~~6~~]]7 wherein

the selected one of the M data modulations in each data modulation sequence and the selected one of the N spreading codes in each alternate spreading code sequence are provided in parallel and wherein

the selected one of the M data modulations in each data modulation sequence and the selected one of the N spreading codes in each spreading code sequence are selected with the M data modulations and the N spreading codes in parallel.

29. (Currently amended) A method of transmitting data and receiving the data at a receiver, including the steps of:

providing the data at the transmitter,

providing [[a]] sequence[[s]] of M data modulations on a reiterative basis in accordance with instructions from the receiver where M indicates the number of the data modulations in the sequence,

providing [[a]] sequence[[s]] of N spreading codes on a reiterative basis in accordance with instructions from the receiver where N indicates the number of the spreading codes in the sequence,

alternately providing the sequences of the M data modulations and the sequences of the N spreading codes on a reiterative basis,

pairing in parallel on a reiterative basis successive ones of the sequences of the M data modulations and the sequences of the N spreading codes,

selecting from each parallel pair on a reiterative basis an individual one of the M data modulations in each data modulation sequence and an individual one of the N spreading codes in each spreading code sequence,

obtaining the product on a reiterative basis of the selected one of the M data modulations and the selected one of the N spreading codes in each parallel pair, and

transmitting to the receiver the product of the selected one of the M data modulations and the selected one of the N spreading codes in each parallel pair.

30. (Previously amended) A method as set forth in claim 29, including the steps of

receiving at the receiver the product of the selected one of the M data modulations and the selected one of the N spreading codes in each parallel pair, and

identifying the product of the selected one of the M data modulations and the selected one of the N spreading codes in each parallel pair.

31. (Currently amended) A method as set forth in claim 30, including the step of:

demodulating at the receiver the selected one of the M data modulations , in each identified product[[,]] in accordance with instructions from the receiver[[,]] to recover the data in the product.

32. (Previously amended) A method as set forth in claim 30, including the step of:

despreading at the receiver the individual one of the N spreading codes in each identified product, in accordance with instructions from the receiver, to recover the data in the product.

33. (Original) A method as set forth in claim 29, including the step of:

encoding the data at the transmitter, in accordance with instructions from the receiver, before the data is modulated.

34. (Currently amended) A method as set forth in claim 30, including the steps of,

encoding the data at the transmitter, in accordance with instructions from the receiver, before the data is modulated and is combined with the spreading code to obtain the product, and

decoding the received product of the selected one of the M data modulations and the selected one of the N spreading codes in each parallel pair ~~after the demodulation and despreading of the data~~.

35. (Previously amended) A method as set forth in claim 29, including the step of:

puncturing the data at the transmitter, in accordance with instructions from the receiver, before the data is modulated and combined with the spreading code to obtain the product.

36. (Currently amended) A method as set forth in claim 29, including the step[[s]] of:

puncturing the data at the transmitter, in accordance with instructions from the receiver, to delete particular data before the data is modulated and combined with the spreading code to obtain the product, and

depuncturing the data at the receiver, in accordance with the instructions from the receiver, to restore the data punctured at the transmitter.

37. (Currently amended) A method as set forth in claim 30, including the steps of:

puncturing the data at the transmitter[[,]] in accordance with instructions from the receiver, to delete particular data before the data is modulated and combined with the spreading code to obtain the product,

despreading at the receiver the identified product [[~~in~~]] of each parallel pair of the selected one of the M data modulations and the selected one of the N spreading codes in each parallel pair,

demodulating at the receiver the despread data at the receiver, and

re-inserting at the receiver the punctured data into the demodulated data to recover the data.

38. (Previously amended) A method as set forth in claim 29, including the steps of:

puncturing the data at the transmitter, in accordance with instructions from the receiver, before the data is modulated and combined with the spreading code to obtain the product, and

interleaving the punctured data at the transmitter before the data is modulated and combined with the spreading code to obtain the product.

39. (Currently amended) A method as set forth in claim 30, including the steps of;

puncturing the data at the transmitter, in accordance with instructions from the receiver, to delete particular data before the data is modulated and is combined with the spreading code to obtain the product,

interleaving the punctured data at the transmitter before the data is modulated and combined with the spreading code to obtain the product ~~and after the data is punctured~~,

de-interleaving the punctured data at the receiver after the selected one of the M data modulations and the selected one of the N spreading codes in each parallel pair has been identified, and

re-inserting the punctured data, in accordance with [[~~the~~]] instructions from the receiver, before the decoding of the data but after the de-interleaving of the data.

40. (Previously amended) A method as set forth in claim 39, including the steps of:

despreading at the receiver the selected one of the N spreading codes in each identified combination, in accordance with instructions from the receiver, to recover the data in the product, and

demodulating at the receiver the selected one of the M data modulations in each identified combination, in accordance with instructions from the receiver, to recover the data in the product.

41. (Currently amended) In a method of receiving and processing data from a transmitter, the steps of:

receiving at a receiver from the transmitter modulated interleaved punctured data[[,]] spread by a particular spreading code~~, received by the receiver from the transmitter~~,

de-spreading the received data[[,]] in accordance with instructions provided by the receiver to the transmitter[[,]] to obtain the spreading of the data at the transmitter, the modulated interleaved punctured data constituting a product of modulated data selected from M data modulations in a data modulation sequence and a spreading code selected from N spreading codes in an N spreading code sequence where M is the number of the data modulations in the sequence and N is the number of the spreading codes in the sequence,

demodulating the modulated data in accordance with instructions provided by the receiver to the transmitter to modulate the data at the transmitter,

de-interleaving the demodulated data,

re-inserting the punctured data into the de-interleaved data in accordance with instructions provided by the receiver to the transmitter to obtain the puncturing of the data at the transmitter, and

decoding the data, after the re-insertion of the punctured data into the de-interleaved data, to recover the data.

42. (Previously amended) In a method as set forth in claim 41 wherein the data received at the receiver from the transmitter constitutes a combination of a selected one of M data modulations in a data modulation sequence and a selected one of N spreading codes in a spreading code sequence where M is the number of the data modulations in the data modulation sequence and N is the number of the spreading codes in the spreading code sequence, the step of:

identifying, from the M data modulations in each data modulation sequence and the N spreading codes in each spreading code sequence, the selected one of the M data modulations in the data modulation sequence and the selected one of the N spreading codes in the spreading code sequence, the identification occurring before the demodulation and the de-spreading of the received data.

43. (Previously amended) Apparatus for transmitting data from a transmitter to a receiver including:

a bus for providing successive sequences of M data modulations and successive sequences of N spreading codes ~~including~~ where M is the number of the data modulations in each data modulation sequence and N is the number of the spreading codes in each spreading code sequence,

a converter for converting each of the successive sequences of the M data modulations and the N spreading codes to a parallel presentation of the M data modulations in each data modulation sequence and the N spreading codes in each successive spreading code sequence,

a first selector for selecting an individual one of the M data modulations in each of the parallel presentations,

a second selector for selecting an individual one of the N spreading codes in each of the parallel presentations,

a multiplier for combining the ~~individual~~ selected one of the M data modulations in each parallel presentation and the ~~individual~~ selected one of the N spreading codes in the parallel presentation, and

a transmitter for transmitting the multiplied combination of the selected one of the M data modulations and the selected one of the spreading codes in each of the parallel presentations.

44. (Currently amended) Apparatus as set forth in claim 43, including

an encoder for encoding the successive sequences of the data before the modulation of the data with the M data modulations in each sequence and before the spreading of the modulated data with the N spreading codes in each sequence.

45. (Previously amended) Apparatus as set forth in claim 43, including

an interleaver for interleaving the encoded data.

46. (Previously amended) Apparatus as set forth in claim 43, including

a stage for puncturing the data in the successive sequences in accordance with instructions from the receiver before the introduction of the M data modulations and the N spreading codes to the converter.

47. (Currently amended) Apparatus [[~~are~~]] as set forth in claim 43, including

the M data modulations introduced to the converter in each data modulation sequence being provided in accordance with instructions from the receiver,

the N spreading codes introduced to the converter in each spreading code sequence being provided in accordance with instructions from the receiver.

48. (Currently amended) Apparatus as set forth in claim 43, including

a stage for interleaving the data in the successive sequences in accordance with instructions from the receiver before the introduction of the M data modulations in each data modulation sequence and the N spreading codes in each spreading code sequence to the converter.

49. (Currently amended) Apparatus as set forth in claim 43, including

the modulator modulating the data with sequences of M data modulations in accordance with instructions from the receiver,

the code spreader spreading the data ~~in accordance~~ with sequences of N spreading codes in accordance with instructions from the receiver,

the modulator and the code spreader being operative before the selections ~~operations~~ provided by the first and second selectors.

50. (Currently amended) Apparatus as set forth in claim 44, including

a stage for puncturing the data in the successive sequences before the introduction of the M data modulations in each data modulation sequence and the N spreading codes in each spreading code sequence to the converter,

a stage for interleaving the data in the successive sequences before the introduction of the M data modulations in each data modulation sequence and the N spreading codes in each spreading code sequence to the converter,

a modulator for modulating the data in the sequences of the M data modulations in accordance with instructions from the receiver,

a code spreader for spreading the data in the sequences of the N spreading codes in accordance with instructions from the receiver,

the modulator and the code spreader being operative before the selections provided by the first and second selectors, and

the transmitter being operative to transmit the combination of the selected one of the M data modulations in each of the successive data modulation sequences and the selected one of the N spreading codes in each of the successive spreading code sequences.

51. (Currently amended) Apparatus for transmitting data from a transmitter to a receiver, including,

an encoder for providing coded channels identifying relative locations of the data,

a modulator for providing sequences of M data modulations in accordance with instructions from the receiver where M is the number of the data modulations in each data modulation sequence,

a code spreader for providing sequences of N spreading codes in accordance with instructions from the receiver where N is the number of the spreading codes in each spreading code sequence and where the sequences of the N spreading codes are juxtaposed to the sequences of the M data modulations,

a converter for converting to a parallel relationship each of the successive encoded sequences of the M modulated data and each of the juxtaposed sequence[[s]] of the N spreading codes ~~to a parallel relationship~~,

a first selector of an individual one of the M ~~modulated~~ data modulations in each data modulation sequence,

a second selector of an individual one of the N spreading codes in the juxtaposed spreading code sequence, and

a stage for combining on a reiterative basis the selected one of the M data modulations in each data modulation sequence and

the selected one of the N spreading codes in the juxtaposed spreading code sequence to produce resultant signals, and

a stage for transmitting the resultant signal[[s]] in each data modulation sequence and spreading code sequence to the receiver.

52. (Previously amended) Apparatus as set forth in claim 51, including

a stage for removing particular ones of the data sequences, before the modulation of the data with the M data modulations and before the spreading of the data with the N spreading codes, in accordance with instructions from the receiver.

53. (Currently amended) Apparatus as set forth in claim 51, including,

a stage for interleaving the data in the sequences before the modulation of the data with the M data modulations in each data modulation sequence and before the spreading of the data with the N spreading codes in each spreading code sequence.

54. (Currently amended) Apparatus as set forth in claim 51, including,

a converter for converting the M data modulations in each data modulation sequence and the N spreading codes in the juxtaposed spreading code sequence to a parallel presentation,

the first and second selectors[[,]] being operative after the conversion of the M data modulations in each data modulation sequence and the conversion of the N spreading codes in the juxtaposed spreading code sequence to the parallel presentation.

55. (Currently amended) Apparatus for providing a transmission of data from a transmitter to a receiver, including[[:]]

a bus for providing data,

a modulator for modulating the data[[,]] each with sequences of M data modulations where M is the number of the data modulations in each sequence, and

a spreader for spreading the modulated data, each with sequences of [[~~M~~]] [[N]] spreading codes where N is the number of the spreading codes in each spreading code sequence,

a converter for converting the M data modulations in each data modulation sequence and the N spreading codes in each spreading code sequence to a parallel presentation where each sequence of the M data modulations is juxtaposed with an individual one of the sequences of the N spreading codes,

a first selector for selecting an individual one of the M data modulations in each parallel presentation,

a second selector for selecting an individual one of the N spreading codes in each parallel presentation, and

a stage for combining the selected one of the M data modulations in each parallel presentation and the selected one of the N spreading codes in the parallel presentation.

56. (Currently amended) Apparatus as set forth in claim 55 wherein

the M data modulations in each data modulation sequence are provided in accordance with instructions from the receiver and wherein

the N spreading codes in each juxtaposed spreading code sequence are provided in accordance with instructions from the receiver and wherein

the combination of the selected one of the data modulations in each parallel presentation and the selected one of the N spreading codes in the parallel presentation constitutes the product of the data modulation and the spreading code.

57. (Currently amended) Apparatus as set forth in claim 55, including

a transmitter for transmitting to the receiver the ~~combination~~ product of the selected one of the M data modulations and the selected one of the N spreading codes in each parallel presentation.

58. (Currently amended) Apparatus as set forth in claim 55 wherein

a puncturer is provided to remove data in the sequences, before the modulation of the data with the M data modulations in each data modulation sequence and before the spreading of the data with the N spreading codes in the juxtaposed spreading code sequence, in accordance with instructions from the receiver.

59. (Currently amended) Apparatus as set forth in claim 55 wherein

an encoder provides channel coding to the data in the sequences before the modulation of the data with the M data modulations in each data modulation sequence and before the spreading of the data with the N spreading codes in each spreading code sequence.

60. (Currently amended) Apparatus as set forth in claim 55 wherein

the M data modulations in each data modulation sequence are provided in accordance with instructions from the receiver and wherein

the N spreading codes in each spreading code sequence are provided in accordance with instructions from the receiver and wherein

a puncturer is provided to remove data in [[~~the~~]] each sequence[[~~s~~]], before the modulation of the data in each sequence with the M data modulations and before the spreading

of the data in the juxtaposed sequence with the N spreading codes, in accordance with instructions from the receiver and wherein

an encoder provides channel coding to the data in the sequences before the modulation of the data in each data modulation sequence with the M data modulations and before the spreading of the data in the juxtaposed spreading code sequence with the N spreading codes.

61. (Currently amended) Apparatus for receiving and processing data from a transmitter, including

a bus for receiving transmitted data representing a combination of an individual one of M data modulations in a data modulation sequence and an individual one of the N spreading codes in a spreading code sequence juxtaposed to the sequence of the M data modulations where M is the number of the data modulations in the data modulation sequence and N is the number of the spreading codes in the spreading code sequence,

a plurality of matched filters disposed in a parallel relationship, each of the filters providing characteristics corresponding to a combination of ~~a selective~~ the individual one of the M data modulations in the data modulation sequence and ~~a selective~~ the individual one of the N spreading codes in the spreading code sequence and each operative to receive the data on the bus and to provide an output dependent upon the matching between the characteristics of the filter[[s]] and the characteristics of the data on the bus, and

a comparator responsive to the output of the matched filters for comparing the magnitude of the outputs from the matched filters in the plurality to select the output with the highest magnitude.

62. (Previously amended) Apparatus as set forth in claim 61 wherein the data has been spread by the N spreading codes in the sequence in accordance with instructions from the receiver; the apparatus including:

a de-spreader at the receiver for removing the spreading codes in the data.

63. (Currently amended) Apparatus as set forth in claim 61 wherein the data has been modulated by the M data modulations in the sequence on a reiterative basis in accordance with instructions from the receiver, the apparatus including:

a demodulator at the receiver for removing the modulations in the data ~~modulations~~.

64. (Original) Apparatus as set forth in claim 61 wherein the data has been punctured in a particular pattern at the transmitter, in accordance with instructions from the receiver, to eliminate portions of the data, the apparatus including:

a de-puncturer for restoring at the receiver the portions of the data eliminated at the transmitter.

65. (Original) Apparatus as set forth in claim 61 wherein the data has been interleaved at the transmitter,

the apparatus including

a de-interleaver for de-interleaving the data.

66. (Previously amended) Apparatus as set forth in claim 61 wherein the data has been encoded at the transmitter to identify the channels in which the data is provided,

the apparatus including:

a decoder at the receiver for eliminating the channel coding.

67. (Currently amended) Apparatus as set forth in claim [[~~84~~]] 61 wherein the data has been modulated at the transmitter by the M data modulations in the sequence in accordance with instructions from the receiver and wherein the data has been interleaved at the transmitter and wherein the data has been punctured at the transmitter in accordance with instructions from the receiver and wherein the data has been spread by the N spreading codes in the sequence in accordance with instructions from the receiver the apparatus including:

a despreader at the receiver for removing the spreading codes in the data,

a demodulator at the receiver for demodulating the M data modulations,

a de-interleaver at the receiver for de-interleaving the data,

a de-puncturer at the receiver for depuncturing the data, and

a decoder [[~~for~~]] at the receiver for decoding the encoded data.

68. (Currently amended) Apparatus for receiving data from a transmitter, including

a bus for receiving transmitted data representing a combination of an individual one of M data modulations in a data modulation sequence and an individual one of N spreading codes in a juxtaposed spreading code sequence where M is the number of the data modulations in the data modulation sequence and N is the number of the spreading codes in the spreading code sequence,

a plurality of multipliers each constructed to combine an individual one of the transmitted data modulations and an individual one of the spreading codes to provide an output representative of the combination,

a plurality of integrators each operatively coupled to an individual one of the multipliers to integrate over a particular period of time the output from the individual one of the multipliers,

a plurality of squaring stages each operatively coupled to the individual one of the integrators for squaring the output of the individual one of the integrators, and

a comparator responsive to the outputs of the squaring stages for selecting the individual one of the squaring stages with the largest output and operatively coupled to the integrators for selecting for its output the output of the individual one of the integrators operatively connected to the individual one of the squaring stages.

69. (Previously amended) Apparatus as set forth in claim 68 wherein the data has been spread by N spreading codes in accordance with instructions from the receiver, the apparatus including:

a de-spreader for restoring the data to the form at the transmitter before the spreading at the transmitter by the N spreading codes.

70. (Original) Apparatus as set forth in claim 68 wherein the data has been modulated by M data modulations in accordance with instructions from the receiver, the apparatus including:

a demodulator for restoring the data to the form at the transmitter before the modulation at the transmitter by the M data modulations.

71. (Original) Apparatus as set forth in claim 68 wherein the data has been punctured in a particular pattern at the transmitter, in accordance with instructions from the receiver, to eliminate portions of the data, the apparatus including:

a de-puncturer for restoring at the receiver the portions of the data eliminated at the transmitter.

72. (Original) Apparatus as set forth in claim 68 wherein the data has been interleaved at the transmitter,

the apparatus including

a de-interleaver for returning the data at the receiver to the form at the transmitter before the interleaving of the data.

73. (Previously amended) Apparatus as set forth in claim 68 wherein the data has been encoded at the transmitter to identify the channels in which the data appears:

the apparatus including:

a decoder for returning the data at the receiver to the form at the transmitter before the encoding of the data by the encoder.

74. (Original) Apparatus as set forth in claim 69 wherein the data has been modulated at the transmitter in accordance with instructions from the receiver and has been interleaved at the transmitter and has been punctured with a particular pattern at the transmitter, in accordance with instructions from the receiver, to eliminate portions of the data and has been encoded at the transmitter, in accordance with instructions from the receiver, to identify channels in which the data is provided, the apparatus including:

a demodulator at the receiver for restoring the data to the form at the transmitter before the modulation at the transmitter by the M data modulations,

a de-interleaver at the receiver for returning the data at the receiver to the form at the transmitter before the interleaving of the data,

a de-puncturer at the receiver for restoring at the receiver the portions of the data eliminated at the transmitter, and

a decoder for returning the data at the receiver to the form at the transmitter before the encoding of the data by the encoder.

75. (Currently amended) A method as set forth in claim 14 wherein

the combination constitutes the product of the selected one of the [[M]]data modulations in each data modulation sequence and the selected one of the N spreading codes in each spreading code sequence.

76. (Currently amended) A method as set forth ~~in combination~~ in claim 12 wherein

the combination constitutes the product of the selected one of the M data modulations in each data modulation sequence and the selected one of the N spreading codes in each spreading code sequence.

77. (Currently amended) A method as set forth in claim 1[[2]][[3]] wherein the combination constitutes the product of the selected one of the M data modulations in each data modulation sequence and the selected one of the N spreading codes in the spreading code sequence.

78. (Original) A method as set forth in claim 14 wherein

the selected one of the M data modulations in each data modulation sequence and the selected one of the N spreading codes in the next alternate sequence of the spreading codes are in parallel and wherein

the combining is defined by the product of the selected one of the M data modulations in each data modulation sequence and the selected one of the N spreading codes in the next alternate sequence of the spreading codes in parallel.

79. (Currently amended) A method as set forth in claim 78, including the steps of providing at the receiver successive combinations of the selected one[[s]] of the M data modulations in each data modulation sequence and the selected one[[s]] of the N spreading codes in the next alternate sequence of the spreading codes, and

identifying the combination[[s]] received at the receiver of the selected one[[s]] of the M data modulations in each data modulation sequence and the selected one[[s]] of the N spreading codes in each next alternate sequence of the spreading codes.

80. (Currently amended) A method as set forth in claim 79 wherein

each combination of the selected data modulation in each data modulation sequence and the selected spreading code in each spreading code sequence is subjected to correlation factors to identify the combination and wherein

the spreading code in each received combination is despread after the identification of the received combination and wherein

each received combination of the modulated data and the spreading code is demodulated after being despread ~~and wherein.~~

~~each combination of the selected data modulation and the selected spreading code is passed through a plurality of matching filters, each having individual characteristics, to identify the characteristics of the combination in accordance with the characteristics of the filter through which the combination passes and wherein~~

~~the spreading code in each received combination is despread after the identification of the combination and wherein~~

~~each received combination of the selected data modulation and the selected spreading code is demodulated after being despread~~.

81. (Currently amended) In a method as set forth in claim 21 wherein

the combination of the selected one of the M data modulations in [[~~the~~]] each data modulation sequence and the selected one of the N spreading codes in [[~~the~~]] each spreading code sequence constitutes the product of the selected one of the M data modulations in each data modulation sequence and the selected one of the N spreading codes in each spreading code sequence.

82. (Currently amended) In a method as set forth in claim 81 wherein

correlation techniques are used to identify, from the combinations of the M data modulations in each [[~~the~~]] data modulation sequence and the N spreading codes in each [[~~the~~]]

spreading code sequence, the combination of the selected one of the M data modulations in [[~~the~~]] each data modulation sequence and the selected one of the N spreading codes in [[~~the~~]] each spreading code sequence

the received data is multiplied by each individual one of the N spreading codes in the correlation techniques and wherein

the individual ones of the products are integrated with time and wherein

the individual ones of the integrated products are squared and wherein

the combination of the selected one of the M data modulations in each data modulation [[~~data~~]] sequence and the selected one of the [[~~M~~]] [[N]] spreading code[[s]] in each spreading code sequence is identified by the highest value in the squaring of the integrated products.

83. (Currently amended) Apparatus as set forth in claim 80 wherein

the combining of the selected one of the [[M]]data modulations in [[~~the~~]] each data modulation sequence and the ~~selective~~ selected one of the [[~~M~~]] [[N]]spreading codes in [[~~the~~]] each spreading code sequence constitutes the product of the ~~selective~~ selected one of the data modulations in each data modulation sequence and the selected one of the [[~~N~~]] spreading codes in each spreading code sequence.

84. (Currently amended) A method of transmitting data from a transmitter to a receiver, including the steps of:

providing successive sequences of a plurality of modulation symbols for the data,

providing a spreading code for the data,

providing a parallel presentation of each of the modulation symbols for the data and the spreading code for the data[[~~m~~]] and

combining each of the parallel presentations to provide signals representation of the presentations.

85. (Original) A method as set forth in claim 84 wherein

the combination constitutes the product of each of the modulation symbols for the data and the spreading code for the data.

86. (Original) A method as set forth in claim 85, including the step of:

selecting the product of successive ones of the modulations in each sequence and the spreading codes with juxtaposed sequences, and

transmitting the successive ones of the products to the transmitter.

87. (Currently amended) A method of transmitting data from a transmitter to a receiver, including the steps of:

providing input signals,

mapping the input signals with a number of binary bits,

providing a spreading code,

modulating the input signals from the mapper with reiterative sequences of M data modulations where M indicates a number of different data modulations,

selecting each successive one of the M modulations in each reiterative sequence [[~~on a~~]] ~~reiterative basis~~, and

combining each successive one of the M modulations in each reiterative sequence and the spreading code.

88. (Currently amended) A method as set forth in claim 87, including

multiplying the combination of each successive one of the M modulations in each reiterative sequence and the spreading code.

89. (Currently amended) A method as set forth in claim 88 wherein

each successive one of the M data modulations in each reiterative data modulation sequence is presented in parallel with the spreading code and wherein

the parallel presentation of each successive one of the M data modulations in each reiterative data modulation sequence and the spreading code[[s]] is multiplied, and wherein

the product of each successive one of the M data modulations in each reiterative data modulation sequence and the spreading code is transmitted to the receiver.

90. (Currently amended) In a method of receiving and processing data from a transmitter, the steps of:

receiving at a receiver signals transmitted from the transmitter and constituting a combination of a selected one of M data modulations in a data modulation ~~signals~~ sequence and a spreading code where M indicates the number of the data modulations in the sequence,

identifying, from the combinations of the M data modulations in the data modulation sequence and the spreading code, the combination of ~~the~~ each selected one of the M data modulations in the data modulation sequence and the spreading code, and

despreading and demodulating the combination of ~~the~~ each selected one of the M data modulations in the data modulation sequence and the spreading code.

91. (Currently amended) In a method as set forth in claim 90 wherein

correlation techniques are used to identify, from the combinations of the M data modulations in the data[[,]] modulation sequence and the spreading code, the combination of [[~~the~~]] each selected one of the M data modulations in the data modulation sequence and the spreading code.

92. (Currently amended) In a method as set forth in claim 90 wherein

matched filter techniques are used to identify[[,]] from the combination of the M data modulations in the data modulation sequence and the spreading code, the combination of [[~~the~~]] each selected one of the M data modulations in the data modulation sequence and the spreading code.

93. (Currently amended) A method of transmitting data from a transmitter to a receiver, including the steps of:

encoding data in accordance with instructions from the receiver,

puncturing the data in accordance with instructions from the receiver,

interleaving the punctured data,

modulating the interleaved punctured data with a selected one of M data modulations in a data modulation sequence in accordance with instructions from the receiver where M is the number of data modulation in the data modulation sequence,

combining [[~~the~~]] each selected one of the M data modulations in the data modulation sequence and a particular spreading code, and

transmitting the combination of [[~~the~~]] each selected one of the M data modulations in the data modulation sequence and the particular spreading code to the receiver.

94. (Currently amended) A method as set forth in claim 93 wherein

the combination constitutes the product of [[~~the~~]] ~~selected one of the~~ each selected one of the M data modulations in the data modulation sequence and the particular spreading code.

95. (Currently amended) A method of transmitting data and receiving the data at a receiver, including the steps of:

providing the data at the transmitter,

providing a sequence of M data modulations in accordance with instructions from the receiver where M indicates the number of the data modulations in the sequence,

providing a spreading code in accordance with instructions from the receiver,

pairing in parallel successive ones of ~~the sequences of~~ the M data modulations in each data modulation sequence and the spreading [[~~a~~]] code where M is the number of the data modulations in each data modulation sequence ,

selecting from the parallel pairs in each data modulation sequence an individual one of the pairing of the M data modulations in each data modulation sequence and the spreading code,

combining in each data modulation sequence the M data modulation and the spreading code in the selected pair, and

transmitting to the receiver in each data modulation sequence the combination of the M data modulation and the spreading code in the selected pair.

96. (Currently amended) A method as set forth in claim 95 wherein

the combination in each data modulation sequence of the M data modulation and the spreading code in the selected pair constitutes the product in each data modulation sequence of the M data modulation and the spreading code in the selected pair.

97. (Currently amended) A method as set forth in claim 96, including the steps of:

receiving at the receiver the product in each data modulation sequence of the M data modulation and the spreading code in the selected pair, and

identifying at the receiver the product in each data modulation sequence of the data modulation and the spreading code in the selected pair.